

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A reception apparatus which receives and reproduces scrambled content, comprising:

reception means for receiving the scrambled content, wherein the scrambled content is scrambled so that a predetermined unit of scrambled content, which is a portion of the scrambled content, is descrambled using a descrambling key corresponding to the predetermined unit of scrambled content, and at least one piece of storage information in which a list including all descrambling keys to be used for descrambling the scrambled content and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scrambled content is embedded;

storage means for storing the received scrambled content and the storage information;

list extraction means for extracting the list from the stored storage information;

descramble processing means for (a) extracting the predetermined unit of scrambled content from the stored scrambled content either sequentially if in a normal reproduction mode, or in an order different from the normal reproduction mode if in a particular reproduction mode, (b) specifying and extracting a descrambling key corresponding to the predetermined unit of scrambled content from the extracted list, using the key specifying information, and (c) descrambling the extracted predetermined unit of scrambled content using the extracted descrambling key; and

reproduction means for reproducing the predetermined unit of descrambled content in the descrambled order.

2. (Original) The reception apparatus of Claim 1, wherein
the reception means receives one piece of storage information in which the list is
embedded,
the storage means stores the received scrambled content and the one piece of storage
information, and

the list extraction means extracts the list from the stored one piece of storage information.

3. (Original) The reception apparatus of Claim 1, wherein
the reception means receives a plurality of pieces of storage information in each piece of
which a divided portion of the list is embedded,
the storage means stores the received scrambled content and the plurality of pieces of
storage information, and
the list extraction means extracts the list from the stored plurality of pieces of storage
information.

4. (Original) The reception apparatus of Claim 1, wherein
the reception means sequentially receives a transport stream (TS) packet including the
predetermined unit of scrambled content,
the storage means sequentially stores the received TS packet, wherein
the descramble processing means includes:
scrambled content extraction means for extracting the predetermined unit of scrambled
content from one of the TS packets stored in the storage means, and counting the ordinal position
of the TS packet from the leading TS packet;

descrambling key extraction means for extracting a descrambling key from the list, based on the counted ordinal position; and

descrambling means for descrambling the extracted predetermined unit of scrambled content using the extracted descrambling key.

5. (Original) The reception apparatus of Claim 1, wherein
the reception means receives at least one storage Entitlement Control Message (ECM) as the at least one piece of storage information, the list being embedded in a portion to be encoded in the main body of the ECM,

the storage means stores the received storage ECMs, and

the list extraction means interprets the stored storage ECMs to extract the list.

6. (Original) The reception apparatus of Claim 5, wherein
the reception means receives the storage ECMs including identifying information for distinguishing the storage ECMs from another type of ECM.

7. (Original) The reception apparatus of Claim 5, wherein
the reception means receives the storage ECMs at a time.

8. (Original) The reception apparatus of Claim 1, wherein
the reception means sequentially receives a TS packet including (a) the predetermined unit of scrambled content and (b) packet specifying information for specifying an unscrambled TS packet, and

the storage means sequentially stores the received TS packet, wherein

the descramble processing means includes:

scrambled content extraction means for extracting the predetermined unit of scrambled content and the packet specifying information from one of the TS packets stored in the storage means;

descrambling key extraction means for extracting a descrambling key from the list, based on the extracted packet specifying information; and

descrambling means for descrambling the extracted predetermined unit of scrambled content using the extracted descrambling key.

9. (Original) The reception apparatus of Claim 8, wherein

the packet specifying information is one of Continuity Counter (CC), the number of TS packets, a cumulative amount of data, a relative reproduction time, and a scrambling key identifier,

the scrambled content extraction means extracts, as the packet specifying information, one of the Continuity Counter (CC), the number of TS packets, the cumulative amount of data, the relative reproduction time, and the scrambling key identifier, and

the descrambling key extraction means performs a predetermined operation to the extracted information as the packet identifying information to generate a descrambling key identifier, and extracts a descrambling key from the list based on the descrambling key identifier.

10. (Original) The reception apparatus of Claim 1, wherein

the reception means sequentially receives a TS packet including (a) the predetermined unit of scrambled content and (b) unscrambled I picture information, wherein the I picture information indicates whether the TS packet corresponding to the information consists of a portion of an I picture/an I picture or not, and

the storage means sequentially stores the received TS packet, wherein

the descramble processing means includes:

scrambled content extraction means for, when performing particular reproduction processes, extracting the predetermined unit of scrambled content and I picture information from one of the TS packets stored in the storage means;

I picture judgement means for judging whether the extracted predetermined unit of scrambled content consists of a portion of an I picture/an I picture or not, based on the extracted I picture information;

descrambling key extraction means for extracting a descrambling key from the list, only when the extracted predetermined unit of scrambled content consists of a portion of an I picture/an I picture; and

descrambling means for descrambling the extracted predetermined unit of scrambled content using the extracted descrambling key.

11. (Original) The reception apparatus of Claim 1 further managing contract information and consisting of a security module whose portion does not effectively function if a contract has not been made, and other modules, the reception apparatus further comprising:

list holding means for holding the list extracted by the list extraction means,

wherein the list extraction means and the list holding means are provided within the security module.

12. (Currently Amended) A reception apparatus which receives and reproduces scrambled content, comprising:

reception means for receiving the scrambled content, wherein the scrambled content is scrambled so that a predetermined unit of scrambled content, which is a portion of the scrambled content, is descrambled using a descrambling key corresponding to the predetermined unit of scrambled content, and a descrambling key is attached to each predetermined unit of scrambled content;

storage means for storing the received scrambled content;

list generation means for, when/after storing the received scrambled content by the storage means, generating a list including all descrambling keys to be used for descrambling the scrambled content and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scramble content, based on the descrambling key attached to each predetermined unit of scrambled content;

descramble processing means for (a) extracting the predetermined unit of scrambled content from the stored scrambled content either sequentially if in a normal reproduction mode, or in an order different from the normal reproduction mode if in a particular reproduction mode, (b) specifying and extracting a descrambling key corresponding to the extracted predetermined unit of scrambled content from the generated list, using the key specifying information, and (c) descrambling the extracted predetermined unit of scrambled content using the extracted descrambling key; and

reproduction means for reproducing the predetermined unit of descrambled content in the descrambled order.

13. (Original) The reception apparatus of Claim 12, wherein
the reception means sequentially receives a TS packet including (a) the predetermined unit of scrambled content, and (b) auxiliary information including a descrambling key and information for associating the descrambling key with scrambled content,
the storage means sequentially stores the received TS packet, and
the list generation means generates the list, based on the auxiliary information.

14. (Original) The reception apparatus of Claim 13, wherein
the TS packet includes an ECM, the auxiliary information being embedded in a portion to be encoded in a main body of the ECM, and
the list generation means extracts the auxiliary information embedded in the ECM, and generates the list based on the auxiliary information.

15. (Currently Amended) A broadcast apparatus which scrambles content and broadcasts the scrambled content to a reception apparatus, the broadcast apparatus comprising:
acquisition means for acquiring content to be scrambled and a plurality of descrambling keys;
scramble processing means for scrambling a predetermined unit of content out of the acquired content so that the predetermined unit of scrambled content is descrambled using a

descrambling key different for each predetermined unit or each set of a plurality of predetermined units;

attaching means for attaching auxiliary information to the predetermined unit of scrambled content, the auxiliary information consisting of (a) information for identifying the scrambled content and (b) a descrambling key corresponding to the content, and used for having the reception apparatus generate a list including [of] the descrambling keys and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scramble content; and

broadcast means for broadcasting the scrambled content to which the auxiliary information is added.

16. (Original) The broadcast apparatus of Claim 15, wherein

the attaching means embeds the auxiliary information in a portion to be encoded in a main body of an ECM and attaches the ECM to the predetermined unit of scrambled content.

17. (Currently Amended) A broadcast apparatus which scrambles content and broadcasts the scrambled content to a reception apparatus, the broadcast apparatus comprising:

acquisition means for acquiring content to be scrambled and a plurality of descrambling keys;

list generation means for generating a list including [of] the descrambling keys and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scramble content;

embedding means for embedding the list in at least one piece of predetermined information to generate at least one piece of storage information;

scramble processing means for scrambling a predetermined unit of content out of the acquired content so that the predetermined unit of scrambled content is descrambled using a descrambling key different for each predetermined unit or each set of a plurality of predetermined units; and

broadcast means for broadcasting the generated storage information and the scrambled content.

18. (Original) The broadcast apparatus of Claim 17, wherein
the embedding means embeds the list in one piece of predetermined information to generate one piece of storage information, and
the broadcasting means broadcasts the generated one piece of information and the scrambled content.

19. (Original) The broadcast apparatus of Claim 17, wherein
the embedding means embeds a divided portion of the list in each of a plurality of pieces of predetermined information to generate a plurality of pieces of storage information, and
the broadcasting means broadcasts the generated plurality of pieces of storage information and the scrambled content.

20. (Original) The broadcast apparatus of Claim 17, wherein
the embedding means embeds the list in a portion to be encoded in a main body of at least
one ECM to generate at least one piece of storage information.

21. (Original) The broadcast apparatus of Claim 17, wherein
the broadcast means broadcasts one set of the storage information while all the scrambled
content corresponding to the storage information are broadcast once.

22. (Currently Amended) A program used for a reception apparatus which receives
and reproduces scrambled content, the program being stored on a computer-readable medium
and having [has] the reception apparatus conduct the following steps of:

a reception step for receiving the scrambled content, wherein the scrambled content is
scrambled so that a predetermined unit of scrambled content, which is a portion of the scrambled
content, is descrambled using a descrambling key corresponding to the predetermined unit of
scrambled content, and at least one piece of storage information in which a list including all
descrambling keys to be used for descrambling the scrambled content and key specifying
information for specifying a descrambling key corresponding to the predetermined unit of
scramble content is embedded;

a storage step for storing the received scrambled content and the storage information;

a list extraction step for extracting the list from the stored storage information;

a descramble processing step for (a) extracting the predetermined unit of scrambled
content from the stored scrambled content either sequentially if in a normal reproduction mode,
or in an order different from the normal reproduction mode if in a particular reproduction mode,

(b) specifying and extracting a descrambling key corresponding to the predetermined unit of scrambled content from the extracted list, using the key specifying information, and (c) descrambling the extracted predetermined unit of scrambled content using the extracted descrambling key; and

a reproduction step for reproducing the predetermined unit of descrambled content in the descrambled order.

23. (Currently Amended) A program used for a reception apparatus which receives and reproduces scrambled content, the program being stored on a computer-readable medium and having [has] the reception apparatus conduct the following steps of:

a reception step for receiving the scrambled content, wherein the scrambled content is scrambled so that a predetermined unit of scrambled content, which is a portion of the scrambled content, is descrambled using a descrambling key corresponding to the predetermined unit of scrambled content, and a descrambling key is attached to each predetermined unit of scrambled content;

a storage step for storing the received scrambled content;

a list generation step for, when [[/]] after storing the received scrambled content in the storage step, generating a list including all descrambling keys to be used for descrambling the scrambled content and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scramble content, based on the descrambling key attached to each predetermined unit of scrambled content;

a descramble processing step for (a) extracting the predetermined unit of scrambled content from the stored scrambled content either sequentially if in a normal

reproduction mode, or in an order different from the normal reproduction mode if in a particular reproduction mode, (b) specifying and extracting a descrambling key corresponding to the extracted predetermined unit of scrambled content from the generated list, using the key specifying information, and (c) descrambling the extracted predetermined unit of scrambled content using the extracted descrambling key; and

a reproduction step for reproducing the predetermined unit of descrambled content in the descrambled order.

24. (Currently Amended) A program used for a broadcast apparatus which scrambles content and broadcasts the scrambled content to a reception apparatus, the program being stored on a computer-readable medium and having [has] the broadcast apparatus conduct the following steps of:

an acquisition step for acquiring content to be scrambled and a plurality of descrambling keys;

a scramble processing step for scrambling a predetermined unit of content out of the acquired content so that the predetermined unit of scrambled content is descrambled using a descrambling key different for each predetermined unit or each set of a plurality of predetermined units;

an attaching step for attaching auxiliary information to the predetermined unit of scrambled content, the auxiliary information consisting of (a) information for identifying the scrambled content and (b) a descrambling key corresponding to the content, and used for having the reception apparatus generate a list including [of] the descrambling keys and key specifying

information for specifying a descrambling key corresponding to the predetermined unit of scramble content; and

a broadcast step for broadcasting the scrambled content to which the auxiliary information is added.

25. (Currently Amended) A program used for a broadcast apparatus which scrambles content and broadcasts the scrambled content to a reception apparatus, the program being stored on a computer-readable medium having [has] the broadcast apparatus conduct the following steps of:

an acquisition step for acquiring content to be scrambled and a plurality of descrambling keys;

a list generation step for generating a list including [of] the descrambling keys and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scramble content;

an embedding step for embedding the list in at least one piece of predetermined information to generate at least one piece of storage information;

a scramble processing step for scrambling a predetermined unit of content out of the acquired content so that the predetermined unit of scrambled content is descrambled using a descrambling key different for each predetermined unit or each set of a plurality of predetermined units; and

a broadcast step for broadcasting the generated storage information and the scrambled content.

26. (Currently Amended) A computer-readable recording medium on which a program used for a reception apparatus which receives and reproduces scrambled content is recorded, the program has the reception apparatus conduct the following steps of:

a reception step for receiving the scrambled content, wherein the scrambled content is scrambled so that a predetermined unit of scrambled content, which is a portion of the scrambled content, is descrambled using a descrambling key corresponding to the predetermined unit of scrambled content, and at least one piece of storage information in which a list including all descrambling keys to be used for descrambling the scrambled content and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scramble content is embedded;

a storage step for storing the received scrambled content and the storage information;

a list extraction step for extracting the list from the stored storage information;

a descramble processing step for (a) extracting the predetermined unit of scrambled content from the stored scrambled content either sequentially if in a normal reproduction mode, or in an order different from the normal reproduction mode if in a particular reproduction mode, (b) specifying and extracting a descrambling key corresponding to the predetermined unit of scrambled content from the extracted list, using the key specifying information, and (c) descrambling the extracted predetermined unit of scrambled content using the extracted descrambling key; and

a reproduction step for reproducing the predetermined unit of descrambled content in the descrambled order.

27. (Currently Amended) A computer-readable recording medium on which a program used for a reception apparatus which receives and reproduces scrambled content is recorded, the program has the reception apparatus conduct the following steps of:

a reception step for receiving the scrambled content, wherein the scrambled content is scrambled so that a predetermined unit of scrambled content, which is a portion of the scrambled content, is descrambled using a descrambling key corresponding to the predetermined unit of scrambled content, and a descrambling key is attached to each predetermined unit of scrambled content;

a storage step for storing the received scrambled content;

a list generation step for, when $[[/]]$ after storing the received scrambled content in the storage step, generating a list including all descrambling keys to be used for descrambling the scrambled content and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scramble content, based on the descrambling key attached to each predetermined unit of scrambled content;

a descramble processing step for (a) extracting the predetermined unit of scrambled content from the stored scrambled content either sequentially if in a normal reproduction mode, or in an order different from the normal reproduction mode if in a particular reproduction mode, (b) specifying and extracting a descrambling key corresponding to the extracted predetermined unit of scrambled content from the generated list, using the key specifying information, and (c) descrambling the extracted predetermined unit of scrambled content using the extracted descrambling key; and

a reproduction step for reproducing the predetermined unit of descrambled content in the descrambled order.

28. (Currently Amended) A computer-readable recording medium on which a program used for a broadcast apparatus which scrambles content and broadcasts the content to a reception apparatus is recorded, the program has the broadcast apparatus conduct the following steps of:

an acquisition step for acquiring content to be scrambled and a plurality of descrambling keys;

a scramble processing step for scrambling a predetermined unit of content out of the acquired content so that the predetermined unit of scrambled content is descrambled using a descrambling key different for each predetermined unit or each set of a plurality of predetermined units;

an attaching step for attaching auxiliary information to the predetermined unit of scrambled content, the auxiliary information consisting of (a) information for identifying the scrambled content and (b) a descrambling key corresponding to the content, and used for having the reception apparatus generate a list including [of] the descrambling keys and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scramble content; and

a broadcast step for broadcasting the scrambled content to which the auxiliary information is added.

29. (Currently Amended) A computer-readable recording medium on which a program used for a broadcast apparatus which scrambles content and broadcasts the content to a reception apparatus is recorded, the program has the broadcast apparatus conduct the following steps of:

an acquisition step for acquiring content to be scrambled and a plurality of descrambling keys;

a list generation step for generating a list including [of] the descrambling keys and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scrambled content;

an embedding step for embedding the list in at least one piece of predetermined information to generate at least one piece of storage information;

a scramble processing step for scrambling a predetermined unit of content out of the acquired content so that the predetermined unit of scrambled content is descrambled using a descrambling key different for each predetermined unit or each set of a plurality of predetermined units; and

a broadcast step for broadcasting the generated storage information and the scrambled content.

30. (Currently Amended) A computer-readable recording medium on which content to be broadcast to a reception apparatus is recorded, wherein the reception apparatus receives and stores scrambled content, and descrambles and reproduces the stored scrambled content, the content comprising:

scrambled content which is scrambled so that a predetermined unit of scrambled content, which is a portion of the scrambled content, is descrambled using a descrambling key corresponding to the predetermined unit of content, and

a storage ECM, wherein a list including all descrambling keys used for descrambling the scrambled content and key specifying information for specifying a

descrambling key corresponding to the predetermined unit of scramble content is embedded in a portion to be encoded in a main body of at least one ECM.

31. (Currently Amended) A method for receiving and reproducing scrambled content, the method comprising the steps of:

a reception step for receiving the scrambled content, wherein the scrambled content is scrambled so that a predetermined unit of scrambled content, which is a portion of the scrambled content, is descrambled using a descrambling key corresponding to the predetermined unit of scrambled content, and at least one piece of storage information in which a list including all descrambling keys to be used for descrambling the scrambled content and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scramble content is embedded;

a storage step for storing the received scrambled content and the storage information;

a list extraction step for extracting the list from the stored storage information;

a descramble processing step for (a) extracting the predetermined unit of scrambled content from the stored scrambled content either sequentially if in a normal reproduction mode, or in an order different from the normal reproduction mode if in a particular reproduction mode, (b) specifying and extracting a descrambling key corresponding to the predetermined unit of scrambled content from the extracted list, using the key specifying information, and (c) descrambling the extracted predetermined unit of scrambled content using the extracted descrambling key; and

a reproduction step for reproducing the predetermined unit of descrambled content in the descrambled order.

32. (Currently Amended) A method for receiving and reproducing scrambled content, the method comprising the steps of:

a reception step for receiving the scrambled content, wherein the scrambled content is scrambled so that a predetermined unit of scrambled content, which is a portion of the scrambled content, is descrambled using a descrambling key corresponding to the predetermined unit of scrambled content, and a descrambling key is attached to each predetermined unit of scrambled content;

a storage step for storing the received scrambled content;

a list generation step for, when/after storing the received scrambled content in the storage step, generating a list including all descrambling keys to be used for descrambling the scrambled content and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scramble content, based on the descrambling key attached to each predetermined unit of scrambled content;

a descramble processing step for (a) extracting the predetermined unit of scrambled content from the stored scrambled content either sequentially if in a normal reproduction mode, or in an order different from the normal reproduction mode if in a particular reproduction mode, (b) specifying and extracting a descrambling key corresponding to the extracted predetermined unit of scrambled content from the generated list, using the key specifying information, and (c) descrambling the extracted predetermined unit of scrambled content using the extracted descrambling key; and

a reproduction step for reproducing the predetermined unit of descrambled content in the descrambled order.

33. (Currently Amended) A method for scrambling content and broadcasting the scrambled content to a reception apparatus, the method comprising the steps of:

an acquisition step for acquiring content to be scrambled and a plurality of descrambling keys;

a scramble processing step for scrambling a predetermined unit of content out of the acquired content so that the predetermined unit of scrambled content is descrambled using a descrambling key different for each predetermined unit or each set of a plurality of predetermined units;

an attaching step for attaching auxiliary information to the predetermined unit of scrambled content, the auxiliary information consisting of (a) information for identifying the scrambled content and (b) a descrambling key corresponding to the content, and used for having the reception apparatus generate a list including [of] the descrambling keys and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scramble content; and

a broadcast step for broadcasting the scrambled content to which the auxiliary information is added.

34. (Currently Amended) A method for scrambling content and broadcasting the scrambled content to a reception apparatus, the method comprising the steps of:

an acquisition step for acquiring content to be scrambled and a plurality of descrambling keys;

a list generation step for generating a list including [of] the descrambling keys and key specifying information for specifying a descrambling key corresponding to the predetermined unit of scramble content;

an embedding step for embedding the list in at least one piece of predetermined information to generate at least one piece of storage information;

a scramble processing step for scrambling a predetermined unit of content out of the acquired content so that the predetermined unit of scrambled content is descrambled using a descrambling key different for each predetermined unit or each set of a plurality of predetermined units; and

a broadcast step for broadcasting the generated storage information and the scrambled content.